



Dart Aerospace Ltd.  
1270 Aberdeen St  
Hawkesbury, ON  
K6A 1K7  
Canada

Tel (613) 632-5200  
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D3454-7

Job Sheet 206247



Part No: D3454-7

Job Qty: 12 pcs *24 pcs 7/4*

Part Name: Bushing



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 1/28/20

Job Tracking No:

Created By: Marie Lajeunesse

Due Date: 2/17/20

Description:

Type: ~~SOLD~~ *sflr*

Note: DWG REV B IPP REV. A 05.11.17 New Issue EC IPP Rev:B 08-04-25 chg to revB DD verified by:EC  
Ship Via:

## Bill of Materials

## Job Routing

| Op No | Operation                   | Qty    | Start Date | Due Date | Standard  |         | Workcenter/Supplier   |           | Sign-off           |
|-------|-----------------------------|--------|------------|----------|-----------|---------|-----------------------|-----------|--------------------|
|       |                             |        |            |          | Setup Hrs | Run Hrs | Workcenter / Supplier | Lead Time |                    |
| 100   | Hardinge - 1                | 12 pcs | 2/17/20    | 2/17/20  | 0.50      | 1.00    | Hardinge - 1          |           | <i>BM 20/03/05</i> |
| 120   | QC 8                        | 12 pcs | 2/17/20    | 2/17/20  | 0.00      | 0.00    | QC 8 - 12             |           | <i>20/03/06</i>    |
|       |                             |        |            |          |           |         | QC 8 - 14             |           |                    |
|       |                             |        |            |          |           |         | QC 8 - 17             |           |                    |
|       |                             |        |            |          |           |         | QC 8 - 20             |           |                    |
|       |                             |        |            |          |           |         | QC 8 - 25             |           |                    |
|       |                             |        |            |          |           |         | QC 8 - 3              |           |                    |
|       |                             |        |            |          |           |         | QC 8 - 32             |           |                    |
|       |                             |        |            |          |           |         | QC 8 - 33             |           |                    |
|       |                             |        |            |          |           |         | QC 8 - 35             |           |                    |
|       |                             |        |            |          |           |         | QC 8 - 39             |           |                    |
|       |                             |        |            |          |           |         | QC 8 - 4              |           |                    |
|       |                             |        |            |          |           |         | QC 8 - 44             |           |                    |
|       |                             |        |            |          |           |         | QC 8 - 45             |           |                    |
|       |                             |        |            |          |           |         | QC 8 - 49             |           |                    |
|       |                             |        |            |          |           |         | QC 8 - 58             |           |                    |
|       |                             |        |            |          |           |         | QC 8 - 8              |           |                    |
|       |                             |        |            |          |           |         | QC 8 - 9              |           |                    |
|       |                             |        |            |          |           |         | QC 8 - 68             |           |                    |
|       |                             |        |            |          |           |         | QC 8 - 67             |           |                    |
|       |                             |        |            |          |           |         | QC 8 - 1 (A)          |           |                    |
|       |                             |        |            |          |           |         | QC 8 - 47             |           |                    |
|       |                             |        |            |          |           |         | QC 8 - 40             |           |                    |
|       |                             |        |            |          |           |         | QC 8 - 52             |           |                    |
|       |                             |        |            |          |           |         | QC 8 - 23             |           |                    |
|       |                             |        |            |          |           |         | QC 8 - 57             |           |                    |
|       |                             |        |            |          |           |         | QC 8 - 76             |           |                    |
|       |                             |        |            |          |           |         | QC 8 - 61             |           |                    |
| 150   | Packaging 3-1 - Stock - B4B | 12 pcs | 2/17/20    | 2/17/20  | 0.00      | 0.00    | Packaging 3 - 1 - B4B |           |                    |
|       |                             |        |            |          |           |         | Packaging 3 - 2 - B4B |           |                    |
|       |                             |        |            |          |           |         | Packaging 3 - 3 - B4B |           |                    |

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|                                                                                                                                                                                                                                |                       |                     |                  |                        |                   |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|---------------------|------------------|------------------------|-------------------|
|                                                                                                                                                                                                                                |                       |                     |                  | Packaging 3 - 4 - B4B  |                   |
|                                                                                                                                                                                                                                |                       |                     |                  | Packaging 3 - 5 - B4B  |                   |
|                                                                                                                                                                                                                                |                       |                     |                  | Packaging 3 - 6 - B4B  |                   |
|                                                                                                                                                                                                                                |                       |                     |                  | Packaging 3 - 7 - B4B  |                   |
|                                                                                                                                                                                                                                |                       |                     |                  | Packaging 3 - 8 - B4B  |                   |
|                                                                                                                                                                                                                                |                       |                     |                  | Packaging 3 - 9 - B4B  |                   |
|                                                                                                                                                                                                                                |                       |                     |                  | Packaging 3 - 10 - B4B |                   |
|                                                                                                                                                                                                                                |                       |                     |                  | Packaging 3 - 11 - B4B |                   |
|                                                                                                                                                                                                                                |                       |                     |                  | Packaging 3 - 12 - B4B |                   |
|                                                                                                                                                                                                                                |                       |                     |                  | Packaging 3 - 13 - B4B |                   |
|                                                                                                                                                                                                                                |                       |                     |                  | Packaging 3 - 14 - B4B |                   |
|                                                                                                                                                                                                                                |                       |                     |                  | Packaging 3 - 15 - B4B |                   |
|                                                                                                                                                                                                                                |                       |                     |                  | Packaging 3 - 16 - B4B |                   |
|                                                                                                                                                                                                                                |                       |                     |                  | Packaging 3 - 17 - B4B |                   |
|                                                                                                                                                                                                                                |                       |                     |                  | Packaging 3 - 18 - B4B |                   |
|                                                                                                                                                                                                                                |                       |                     |                  | Packaging 3 - 19 - B4B |                   |
|                                                                                                                                                                                                                                |                       |                     |                  | Packaging 3 - 20 - B4B |                   |
|                                                                                                                                                                                                                                |                       |                     |                  | Packaging 3 - 21 - B4B |                   |
|                                                                                                                                                                                                                                |                       |                     |                  | Packaging 3 - 22 - B4B |                   |
|                                                                                                                                                                                                                                |                       |                     |                  | Packaging 3 - 23 - B4B |                   |
|                                                                                                                                                                                                                                |                       |                     |                  | Packaging 3 - 24 - B4B |                   |
|                                                                                                                                                                                                                                |                       |                     |                  | Packaging 3 - 25 - B4B |                   |
|                                                                                                                                                                                                                                |                       |                     |                  | Packaging 3 - 26 - B4B |                   |
|                                                                                                                                                                                                                                |                       |                     |                  | Packaging 3 - 27 - B4B |                   |
|                                                                                                                                                                                                                                |                       |                     |                  | Packaging 3 - 28 - B4B |                   |
|                                                                                                                                                                                                                                |                       |                     |                  | Packaging 3 - 29 - B4B |                   |
|                                                                                                                                                                                                                                |                       |                     |                  | Packaging 3 - 30 - B4B |                   |
|                                                                                                                                                                                                                                |                       |                     |                  | Packaging 3 - 31 - B4B |                   |
|                                                                                                                                                                                                                                |                       |                     |                  | Packaging 3 - 32 - B4B |                   |
|                                                                                                                                                                                                                                |                       |                     |                  | Packaging 3 - 33 - B4B |                   |
|                                                                                                                                                                                                                                |                       |                     |                  | Packaging 3 - 34 - B4B |                   |
|                                                                                                                                                                                                                                |                       |                     |                  | Packaging 3 - 35 - B4B |                   |
|                                                                                                                                                                                                                                |                       |                     |                  | Packaging 3 - 36 - B4B |                   |
|                                                                                                                                                                                                                                |                       |                     |                  | Packaging 3 - 37 - B4B |                   |
| 160 QC 21 - SA                                                                                                                                                                                                                 | 24                    | 12 pcs              | 2/17/20          | 0.00 0.00              | QC 21 - SA - 21 ✓ |
|                                                                                                                                                                                                                                |                       |                     |                  |                        | QC 21 - SA - 70   |
|                                                                                                                                                                                                                                |                       |                     |                  |                        | QC 21 - SA - 53   |
| Part Op 100 - 1-TURN AS PER FOLIO FA573 & DWG D3454 ,<br>Descriptions: 120 - (QC8- Inspect parts - second check)<br>150 - (Identify as per dwg & Stock Location: _____)<br>160 - (QC21- Final Inspection - Work Order Release) |                       |                     |                  |                        | DAS<br>21<br>9-88 |
| MAR 06 2020                                                                                                                                                                                                                    |                       |                     |                  |                        |                   |
| <b>Job BOM</b>                                                                                                                                                                                                                 |                       |                     |                  |                        |                   |
| <b>Part / Item</b>                                                                                                                                                                                                             | <b>Component Name</b> | <b>Quantity</b>     | <b>Operation</b> | <b>Container</b>       |                   |
| M303R0.750                                                                                                                                                                                                                     | 303 Round Bar 0.750   | .6312 ft (.0526 ea) | 100-Hardinge - 1 | S232979                |                   |
| <b>Job Allocations</b>                                                                                                                                                                                                         |                       |                     |                  |                        |                   |
| <b>Operation</b>                                                                                                                                                                                                               | <b>Component Part</b> | <b>Required</b>     | <b>Inventory</b> | <b>Allocated</b>       |                   |
| 100-Hardinge - 1                                                                                                                                                                                                               | M303R0.750            | 1                   | 115              | 0                      |                   |

| Part Specifications |             |                                |                |       |                  |
|---------------------|-------------|--------------------------------|----------------|-------|------------------|
| Spec No             | Description | Target/Tolerance               | Limits         | Type  | Special Comments |
| 1                   | Bushing     | 0.250inches + 0.005<br>- 0.000 | 0.255<br>0.250 | 0.250 | VERN+ P.I.N      |
| 2                   | Bushing     | 0.372inches + 0.000<br>- 0.005 | 0.372<br>0.367 | 0.369 | MIC FL-05        |
| 3                   | Bushing     | 0.343inches + 0.005<br>- 0.000 | 0.348<br>0.343 | 0.343 | VERN RJ-05       |
| 4                   | Bushing     | 0.060inches + 0.010<br>- 0.000 | 0.070<br>0.060 | 0.064 | VERN             |
| 5                   | Bushing     | 0.750inches ± 0.030            | 0.780<br>0.720 | 0.744 | VERN             |

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Entered:

Date:

## WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No.

Route update only



|                                                                                                                                                                                                                                                                                                                                                                                     |                                 |                                                                                                                               |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                       |                  |                   |                                                                                                                                                     |  |                 |               |                  |                  |         |                       |               |                   |          |           |                 |         |        |                      |      |        |                              |                                 |                    |                   |               |             |                 |         |            |              |                |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------|---------------|------------------|------------------|---------|-----------------------|---------------|-------------------|----------|-----------|-----------------|---------|--------|----------------------|------|--------|------------------------------|---------------------------------|--------------------|-------------------|---------------|-------------|-----------------|---------|------------|--------------|----------------|--|
| Job: _____<br>Part No. _____                                                                                                                                                                                                                                                                                                                                                        |                                 | <b>DISPOSITION</b><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/> |                   | <b>DEPARTMENT/PROCESS</b><br>Skid-tube <input type="checkbox"/> Eng. (Non-AW) <input type="checkbox"/><br>Machining <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/><br>Large Fab <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/><br>Cross tube <input type="checkbox"/><br>Small Fab <input type="checkbox"/><br>Finishing <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                              |                       |                  |                   | Engineering <input type="checkbox"/><br>Water Jet <input type="checkbox"/><br>Supplier <input type="checkbox"/><br>Quality <input type="checkbox"/> |  |                 |               |                  |                  |         |                       |               |                   |          |           |                 |         |        |                      |      |        |                              |                                 |                    |                   |               |             |                 |         |            |              |                |  |
| Date:                                                                                                                                                                                                                                                                                                                                                                               |                                 | Sequence #:                                                                                                                   |                   | QTY Affected:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                       | MRB (QS1042)     |                   |                                                                                                                                                     |  |                 |               |                  |                  |         |                       |               |                   |          |           |                 |         |        |                      |      |        |                              |                                 |                    |                   |               |             |                 |         |            |              |                |  |
| Description Work Order Deviation                                                                                                                                                                                                                                                                                                                                                    |                                 |                                                                                                                               |                   | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                       |                  |                   |                                                                                                                                                     |  |                 |               |                  |                  |         |                       |               |                   |          |           |                 |         |        |                      |      |        |                              |                                 |                    |                   |               |             |                 |         |            |              |                |  |
| <b>Root Cause</b><br>Operator <input type="checkbox"/><br>Manufacturing Process <input type="checkbox"/><br>Equip/Tooling <input type="checkbox"/><br>Handling/Preservation <input type="checkbox"/><br>Material <input type="checkbox"/><br>Product Improvement <input type="checkbox"/><br>Process Improvement <input type="checkbox"/><br>Human Factors <input type="checkbox"/> |                                 |                                                                                                                               |                   | <b>FAULT CATEGORY</b><br><table border="1"> <tr> <td>Pressure/Forced</td> <td>Contamination</td> <td>Power Loss/Surge</td> <td>Positioned Wrong</td> </tr> <tr> <td>Bending</td> <td>Misaligned/off center</td> <td>Folio/Program</td> <td>Outside Tolerance</td> </tr> <tr> <td>Crushing</td> <td>BOM/Route</td> <td>Grain Direction</td> <td>Drawing</td> </tr> <tr> <td>Cracks</td> <td>Broken/Damage/Defect</td> <td>Weld</td> <td>Finish</td> </tr> <tr> <td>Crimp/Kink/Ripple/Wave/Twist</td> <td>Incomplete/Unclear Instructions</td> <td>Wrong Stock Pulled</td> <td>Part Lost/Missing</td> </tr> <tr> <td>Marks/Chatter</td> <td>Drill Holes</td> <td>Out of Sequence</td> <td>Misread</td> </tr> <tr> <td>Mislabeled</td> <td>Fit/Function</td> <td>Off-set/Set-up</td> <td></td> </tr> </table> |                       |                  |                   |                                                                                                                                                     |  | Pressure/Forced | Contamination | Power Loss/Surge | Positioned Wrong | Bending | Misaligned/off center | Folio/Program | Outside Tolerance | Crushing | BOM/Route | Grain Direction | Drawing | Cracks | Broken/Damage/Defect | Weld | Finish | Crimp/Kink/Ripple/Wave/Twist | Incomplete/Unclear Instructions | Wrong Stock Pulled | Part Lost/Missing | Marks/Chatter | Drill Holes | Out of Sequence | Misread | Mislabeled | Fit/Function | Off-set/Set-up |  |
|                                                                                                                                                                                                                                                                                                                                                                                     |                                 |                                                                                                                               |                   | Pressure/Forced                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Contamination         | Power Loss/Surge | Positioned Wrong  |                                                                                                                                                     |  |                 |               |                  |                  |         |                       |               |                   |          |           |                 |         |        |                      |      |        |                              |                                 |                    |                   |               |             |                 |         |            |              |                |  |
|                                                                                                                                                                                                                                                                                                                                                                                     |                                 |                                                                                                                               |                   | Bending                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Misaligned/off center | Folio/Program    | Outside Tolerance |                                                                                                                                                     |  |                 |               |                  |                  |         |                       |               |                   |          |           |                 |         |        |                      |      |        |                              |                                 |                    |                   |               |             |                 |         |            |              |                |  |
|                                                                                                                                                                                                                                                                                                                                                                                     |                                 |                                                                                                                               |                   | Crushing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | BOM/Route             | Grain Direction  | Drawing           |                                                                                                                                                     |  |                 |               |                  |                  |         |                       |               |                   |          |           |                 |         |        |                      |      |        |                              |                                 |                    |                   |               |             |                 |         |            |              |                |  |
| Cracks                                                                                                                                                                                                                                                                                                                                                                              | Broken/Damage/Defect            | Weld                                                                                                                          | Finish            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                       |                  |                   |                                                                                                                                                     |  |                 |               |                  |                  |         |                       |               |                   |          |           |                 |         |        |                      |      |        |                              |                                 |                    |                   |               |             |                 |         |            |              |                |  |
| Crimp/Kink/Ripple/Wave/Twist                                                                                                                                                                                                                                                                                                                                                        | Incomplete/Unclear Instructions | Wrong Stock Pulled                                                                                                            | Part Lost/Missing |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                       |                  |                   |                                                                                                                                                     |  |                 |               |                  |                  |         |                       |               |                   |          |           |                 |         |        |                      |      |        |                              |                                 |                    |                   |               |             |                 |         |            |              |                |  |
| Marks/Chatter                                                                                                                                                                                                                                                                                                                                                                       | Drill Holes                     | Out of Sequence                                                                                                               | Misread           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                       |                  |                   |                                                                                                                                                     |  |                 |               |                  |                  |         |                       |               |                   |          |           |                 |         |        |                      |      |        |                              |                                 |                    |                   |               |             |                 |         |            |              |                |  |
| Mislabeled                                                                                                                                                                                                                                                                                                                                                                          | Fit/Function                    | Off-set/Set-up                                                                                                                |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                       |                  |                   |                                                                                                                                                     |  |                 |               |                  |                  |         |                       |               |                   |          |           |                 |         |        |                      |      |        |                              |                                 |                    |                   |               |             |                 |         |            |              |                |  |
| Other/Details:                                                                                                                                                                                                                                                                                                                                                                      |                                 |                                                                                                                               |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                       |                  |                   |                                                                                                                                                     |  |                 |               |                  |                  |         |                       |               |                   |          |           |                 |         |        |                      |      |        |                              |                                 |                    |                   |               |             |                 |         |            |              |                |  |
| Completed By                                                                                                                                                                                                                                                                                                                                                                        |                                 |                                                                                                                               |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                       |                  |                   |                                                                                                                                                     |  |                 |               |                  |                  |         |                       |               |                   |          |           |                 |         |        |                      |      |        |                              |                                 |                    |                   |               |             |                 |         |            |              |                |  |
| Lead hand / Supervisor                                                                                                                                                                                                                                                                                                                                                              |                                 |                                                                                                                               |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                       |                  |                   |                                                                                                                                                     |  |                 |               |                  |                  |         |                       |               |                   |          |           |                 |         |        |                      |      |        |                              |                                 |                    |                   |               |             |                 |         |            |              |                |  |
| QC / QA Coordinator                                                                                                                                                                                                                                                                                                                                                                 |                                 |                                                                                                                               |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                       |                  |                   |                                                                                                                                                     |  |                 |               |                  |                  |         |                       |               |                   |          |           |                 |         |        |                      |      |        |                              |                                 |                    |                   |               |             |                 |         |            |              |                |  |